Atty. Docket No. 28076/SV1094

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Wolfe, *et al.*	)	Title: Electric motor
	)	
Serial No.: 10/662,683	)	Group Art Unit: 3729
	)	
Filed: September 15, 2003	)	Examiner: T.D. Phan

APPEAL BRIEF

MS Appeal Brief – Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Sir:

This appeal brief is filed in response to the June 8, 2007 notice. The commissioner has already been authorized to charge the required fee to deposit account no. 13-2855.

This brief contains items under the following headings, as required by 37 CFR §41.37 and MPEP §1206:

I.	Real Party in Interest
II	Related Appeals and Interferences
III.	Status of Claims
IV.	Status of Amendments
V.	Summary of Claimed Subject Matter
VI.	Grounds of Rejection to be Reviewed on Appeal
VII.	Argument
VIII.	Claims Appendix
IX.	Evidence Appendix
X.	Related Proceedings Appendix

I. REAL PARTY IN INTEREST

The real party in interest in this appeal is Shop Vac Corporation, of Williamsport, Pennsylvania.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals, interferences, or judicial proceedings that will directly affect, or be directly affected by, or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

There are nine claims pending in application. Claims 1-10 were canceled. Claims 11-19 were rejected and are all at issue in this appeal. Claims 20-32 were canceled. Claims 33-43 were withdrawn.

IV. STATUS OF AMENDMENTS

There was no amendment filed after the April 9, 2007 final rejection.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The application at issue discloses a method that enables electric motors to be built more quickly and efficiently. As explained in paragraphs 2 and 3 of the specification (page 1, lines 6-18), the circuitry of electric motors have conventionally been produced using these steps:

1) connecting the end of the magnet wire to a terminal on a fuse;

2) providing a separate lead wire;

3) connecting one end of the lead wire to another terminal on the fuse; and

4) connecting the other end of the lead wire to the power switch.

These steps generally require operations by machines at two separate work stations.

The method of claim 11 of the present application simplifies the assembly process by eliminating the need for a separate lead wire.

To achieve this simplification, the new method replaces the above-identified steps with new steps, each recited in claim 11:

1) instead of connecting the end of the magnet wire [76] to one of the terminals [58, 60] on the fuse [56], the magnet wire [76] is laid across both the exit terminal [60] and the input terminal [58] on the fuse [56] (page 10, lines 18-20);

2) extended past the fuse, the end of the magnet wire [76] is terminated at the switch [40] (specifically, it is attached to a block [50] on the terminal [48] on the switch) (page 10, lines 18-20, see also fig. 3);

3) the magnet wire [76] is severed between the input terminal [58] and the exit terminal [60] on the fuse [56] (page 11, lines 13-16, see also figs. 2 and 3).

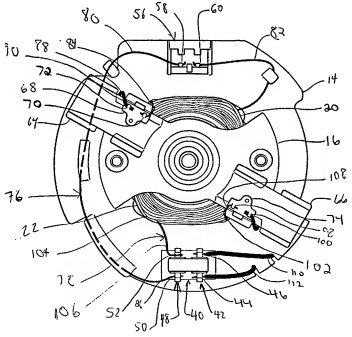


FIG. 3

VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

Concise statement

The examiner rejected the claims on obviousness grounds. Claims 11-13 and 16-18 were rejected under 35 USC 103(a) as being unpatentable over *Sunaga et al* (US 6,737,770) in view of *Matsuoka et al* (US 5,880,666) or vice versa. Dependent claims 14, 15, and 19 were rejected under 35 USC 103(a) as being unpatentable over *Sunaga et al* in view of *Matsuoka et al* and further in view of *Lewchenko et al* (US 6,058,595).

Explanation

The *Sunaga et al.* '770 patent discloses a brushless electric motor in which much of the circuitry is contained on a first circuit section [31] and a second circuit section [32] on a printed wiring board [40]. The two circuit sections are stacked within a case [20]. A fuse [60] is mounted between the two circuit sections. [Col. 6, lines 3-8]

FIG.4

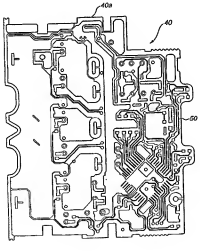
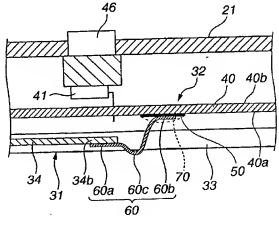


FIG.7A



The examiner acknowledged that that the '770 patent does not disclose laying a magnet wire across the two terminals of the fuse and then cutting the intermediate portion of the wire.

[6/7/05 office action, p. 4] Instead, the examiner cited the *Matsuoka et al.* '666 patent as suggesting the modifications needed to complete the claimed invention.

The fuse of the '666 patent is intended for retrofitting additional equipment into a existing, functioning electrical system, such as installing new audio equipment in an existing automobile. The first stated purpose of the '666 patent is "to provide a fuse which has a simple construction, and can be easily mounted at an existing circuit." [Col. 1, lines 53-55, emphasis added] The disclosed fuse has press-fit terminals that fit onto the existing wire and has an integral wire cutter that cuts the intermediate portion of the wire when the fuse is pressed onto the wire.

Broadly stated, the sole issue for appeal (the issue common to both rejections) is whether it would have been obvious to one of ordinary skill in the art to modify the '770 motor by incorporating the '666 fuse. Specifically, would it have been obvious to one of ordinary skill in the art to replace a fuse that is soldered onto the back of a printed wiring board with a fuse that is designed to be installed by pressing it onto an existing wire?

VII. ARGUMENT

The issue may be a close one, but the rejection can and should be reversed. It would not have been obvious to those of ordinary skill in the art to incorporate the '666 fuse into the '770 motor because that fuse is not designed to be installed onto the kinds of boards used in that motor.

Rejection of claims 11-13 and 16-18

The '666 fuse is designed to be attached to a wire. Without a wire, the press-fit terminals and the integral wire cutter on the fuse are useless. The fuse in the '770 motor, on the other

hand, is mounted in a specific location on a wiring board, rather than connected to a wire. The last complete paragraph in col. 6 of the '770 patent indicates that the particular location where the fuse is installed is important. Accordingly, to incorporate the '666 fuse into the '770 motor, one of ordinary skill in the art would first note that a conventional wire would need to be added to the motor so that the fuse could be attached.

In the June 7, 2005 office action, the examiner concluded that the integrated circuitry of the '770 patent would work equally well or better than the kind of "floating magnet wire" arrangement of the claimed method. Indeed, those of ordinary skill in the art would likely view the addition of a conventional wire into the integrated circuitry of the '770 patent as a technological step backwards. Rather than support a rejection, however, the backwardness of this modification cuts against a finding of obviousness. It is not obvious to step backwards. Even at a threshold level, those of ordinary skill in the art would be skeptical about replacing the existing fuse in the '770 patent with the '666 fuse.

If pushed, their resistance would only grow. Those of ordinary skill in the art would recognize that the point of '666 patent is to make installing a fuse easier. The '666 device simplifies the process by making it unnecessary to cut, strip, and then re-connect the ends of the wire. Adding a new wire to the '770 circuitry would require those same steps. Thus, installing a new wire for the '666 fuse to be attached to would require the manufacturer to perform the very same cutting, stripping, and connecting steps that the '666 patent was supposed to avoid.

It is not common sense to use a fuse in circumstances where the advantages of that fuse do not apply. It would not have been obvious to one of ordinary skill in the art to replace the existing fuse in the '770 motor with the '666 fuse. Indeed, doing so would defy common sense

because it would make the process harder, rather than easier. It would require the manufacturer to perform the very same steps that the '666 patent was intended to avoid.

Although the applicants believe that this is the correct way to analyze the possible obviousness of the claimed invention over the cited references, the examiner may have analyzed the issue slightly differently. On page 3 of the January 9, 2007 final office action, the examiner appears to have read the '666 patent as suggesting that any fuse can be installed by stretching a wire across two terminals on the fuse and then cutting the intermediate section. Interpreting the '666 patent in this broad way, rather than as a product that makes it easier to install a fuse on an existing wire, ignores the first stated "object" of the patent.

Whether ignoring the stated object of a patent is permissible or not, there is still no suggestion of why one of ordinary skill in the art would want to apply that teaching to the device shown in the '770 patent. As explained above, those of ordinary skill in the art would resist the idea of adding on otherwise unnecessary extra wire to the '770 motor. Whether the '666 patent is interpreted broadly or narrowly, those of ordinary skill in the art would not have used the '666 fuse in the '770 motor.

Because those of ordinary skill in the art would not have made the substitution that the examiner has suggested, the applicants believe that the rejection of claim 11 can and should be reversed. Dependent claims 12-13 and 16-18 can be allowed on the same basis.

Rejection of claims 14, 15, and 19

In rejecting dependent claims 14, 15, and 19, the examiner cited the '595 patent as teaching the use of hooks or tangs. The examiner did not contend that this patent supplied a motivation to incorporate the '666 fuse into the '770 motor, as required to support a rejection of

the base independent claim (claim 11). Thus, there is nothing in the cited references suggesting the combination required by the base independent claim. Consequently, the rejection of these dependent claims should also be reversed.

VIII. CLAIMS APPENDIX

A copy of the claims at issue here is attached as appendix A.

IX. EVIDENCE APPENDIX

No additional evidence is appended.

X. RELATED PROCEEDINGS APPENDIX

Since there are no related proceedings, no "related proceedings" appendix is included.

Respectfully submitted,

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December 12, 2007

APPENDIX A

Claims Involved in the Appeal of Application Serial No. 10/662,683

11. A method of making an electric motor, comprising:

winding a first magnet wire about a first lug in a winding board and a first protrusion in a stator, the winding board being disposed on the stator and including a switch having at least an internal terminal, and a fuse having an input terminal and an exit terminal;

laying the first magnet wire across the exit terminal and the input terminal on the fuse;

terminating the first magnet wire at the switch; and

severing the first magnet wire between the input terminal and the exit terminal on the fuse.

12. The method of claim 11, further comprising routing the first magnet wire along the winding board under clips.

13. The method of claim 11, wherein the switch includes an internal terminal and an external terminal, the internal terminal includes a first block and a second block, and the first magnet wire is terminated on the first block.

14. The method of claim 13, wherein the first block and the second block include tang terminals and the first magnet wire is fused to the tang of the first block by welding.

15. The method of claim 11, wherein the input terminal and the exit terminal include tangs, and the first magnet wire is fused to the tangs by welding.

16. The method of claim 11, further comprising winding the first magnet wire about the first lug in the winding board and the first protrusion in the stator to form a first pole.

17. The method of claim 11, further comprising winding a second magnet wire about a second lug in the winding board and a second protrusion in the stator to form a second pole.

18. The method of claim 17, further comprising disposing the end of the second magnet wire on the second block of the internal terminal.

19. The method of claim 18, further comprising fusing the second magnet wire to the tang of the second block by welding.